EMobility Markets and Value Chains: Lessons learned from Africa, China and Malaysia

ECOWAS Sustainable Energy Forum

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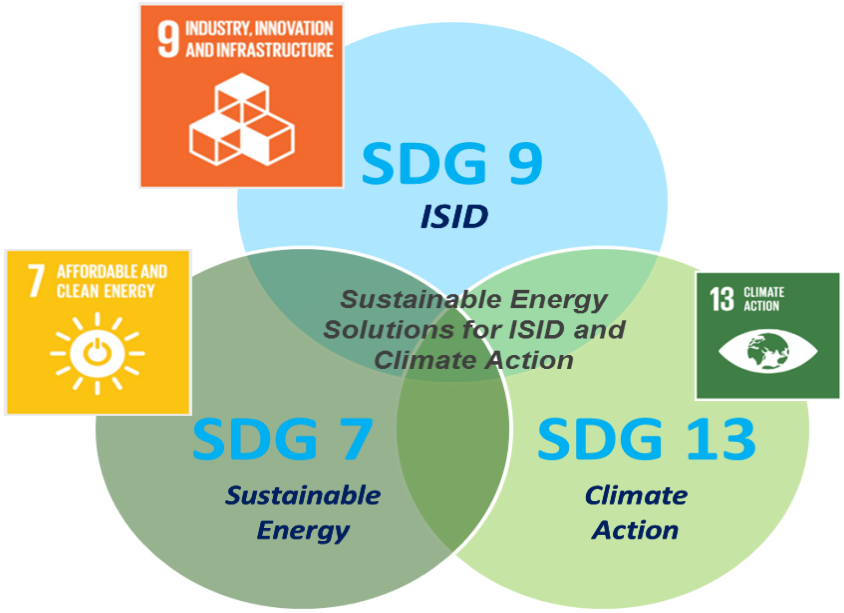
Outline

- Introduction and Programme history
- Sustainable mobility programme: Focus and building blocks
- Sample Projects

UNIDO Mission

SDGs, Climate Action and UNIDO

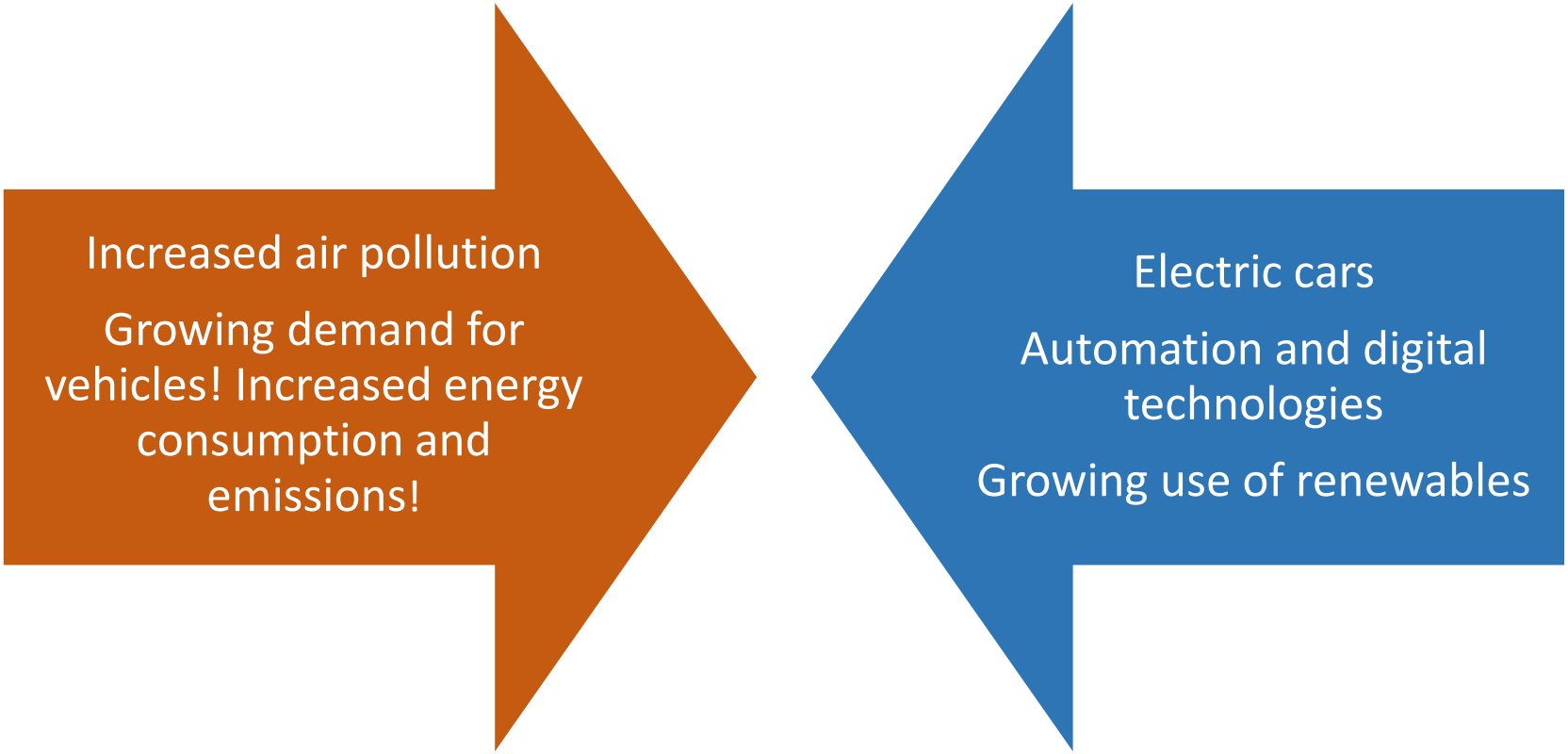


Promoting sustainable energy solutions for developing productive capacities, industrial competitiveness and climate action:

- **Jobs Creation**
- **Business Models**
- **Women's Empowerment**
- **Nexus Co-benefits**
- **Promoting innovation**

UNIDO & automotive industry

A decade later … New challenges and opportunities



UNIDO's Sustainable Transport Programme

1. To promote low-carbon transport solutions within:
   - Industrial, commercial and goods supply chain transport matrixes.
   - Urban public and private transport fleets.
2. To promote the use of renewables for electric mobility
3. To build local manufacturing capacities for EVs

Programme Components

- Standards for the charging infrastructure
- Socioeconomic impact study
- Incentive packages
- National roadmaps

Policies

Demonstration projects

- Charging infrastructure deployment
- Battery swapping, shared mobility, energy management center
- EV manufacturing

- Sharing of best practices
- Creating a network of cities and countries
- Building an understanding on the benefits of electric mobility

Awareness

Integrated Adoption of New Energy Vehicles in China

Objective

Facilitate and scale up integrated development of New Energy Vehicles (NEVs), by developing the charging infrastructure system in the cities of Shanghai and Yancheng.

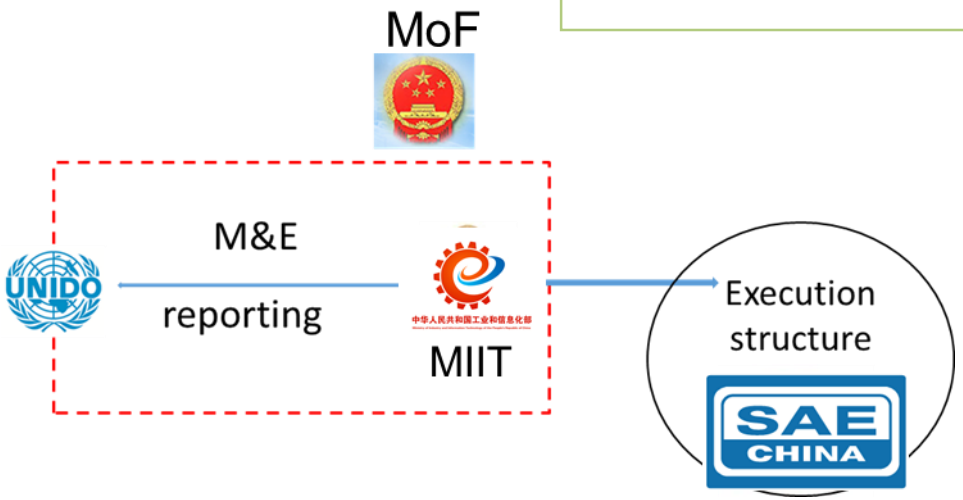
GEF grant: 9MUSD

Co-financing:

Recipient Government
30.3MUSD

UNIDO
500,000USD

Private financial sector
86.2*MUSD*



Overall Expectations and Outcomes

1. Identifying different government policies that may be adopted to support the integrated adoption of EVs implementation (e.g. US, Japan and China)
2. Sharing standards, tools and methodologies to support EVs adoption
3. Exposing policymakers and project teams to international best practice
4. Establishing collaboration networks between adopting countries and cities
5. To increase the level of awareness and creating shared understanding of stakeholders on electro mobility as an effective technology, and the required policies to promote it.

Actions Undertaken

Recommended **national-level roadmap for the integrated development of EVs with RE.**
Suggested policy and framework on load balancing and potential smart charging related regulations.
Issuance of **fire safety standards for retired EV battery as energy storage**.
Conducting World New Energy Vehicle Congress
Demonstration of smart charging systems in Shanghai
Demonstration of **EV-RE micro-grids in Shanghai**
Scaling up of Shanghai car sharing business model (using EVCARD brand fleet) to 8,000 vehicles with 4,000 rental/recharging sites citywide (co-financing)
One video on promoting New Energy Vehicle safety

Energy Efficient Low-carbon Transport in South Africa

Objective

Promotion of the widespread use of electric vehicles and non-motorized transport (NMT) as part of the Green Transport and Green Cities initiatives of South Africa to facilitate local manufacturing of EV and bicycle parts and components and the development of the necessary infrastructure

GEF grant: 1.3 MUSD

Co-financing:

Recipient Government
1.8 MUSD

UNIDO

160,000USD

Private financial sector
4 *MUSD*

Overall Expectations and Outcomes

1. Assist in National policy and regulatory framework strengthening incl. incentive programmes, tax incentives, design, planning, and safety guidelines, etc. to promote early take-off, widespread use, and local manufacturing of EVs and NMT strengthened

2. Increase institutional capacity and awareness on EV and NMT use - with a special focus on eThekwini Municipality & and the City of Johannesburg

3. Demonstrate 4 PV-based charging stations (fast and off-line) for EVs

4. Enhance standards and regulations for EV infrastructure, including charging stations, safety, and support applications.

5. Demonstrate and provide support to the establishment of target NMT solutions for selected cities.

Activities Undertaken

- **Solicited industry comments on National Roads Transport Policy** chapter on eco mobility and submitted report and recommendations for inclusive policy statements to the National Department of Transport.

- Exhibited and **hosted the 2018 and 2019 annual Transport Seminar** at Sustainability Week and formulated the LCT-SA Project Communications Guidebook.

- Hosted an Operator's briefing workshop for City of Johannesburg University Corridor Bicycle Share Scheme Pilot Project.

- **Standards to be facilitated and developed through the Electric Vehicle Industry Association** supported by the LCT-SA Project. EVIA has confirmed that South Africa (with guidance from the IEC) has adopted international standards for EV infrastructure.

- Installation of two grid-based charging stations at the city of Tshwane Headquarters
- Installation of **2 Solar PV powered charging stations** at Bosman Police Station and Tshwane Mayor's Office in Centurion

Energy Efficient Low-carbon Transport in Malaysia

Objective

To catalyze and accelerate widespread use of electric vehicles (EVs) as part of energy efficient low carbon transport and low-carbon cities initiatives of Malaysia

GEF grant: 2.0 MUSD

Co-financing:

Recipient Government
4.0 MUSD

UNIDO

210,000USD

Private financial sector
8.3 *MUSD*

Overall Expectations and Outcomes
1. Assist in national policy and regulatory framework strengthening to catalyze and accelerate widespread use of EVs, both public and private.
2. Increase institutional capacity and awareness on EV use
3. Demonstrate 6 PV-based charging stations (fast and off-line) for EVs
4. Enhance standards and regulations for EV infrastructure, including charging stations, safety, and support applications.
5. Boost local manufacturing of EV bus and motorcycle components supported through development of enabling support programmes; & enhance incentives and industry support to encourage Foreign Direct Investment in the sector

Actions Undertaken

Initiated **development of a holistic policy and action plan** for Low Carbon Mobility in Malaysia which is not limited to EVs but also cleaner fuel technology for wider land transportation including commercial transport

Initiated the **development of an EV Roadmap** following recommendation of the Low Carbon Mobility policy and action plan development.

Installation of PV-based grid-connect 1 fast and 1 slow charger at a North-South Highway under PLUS Highway Air Keroh OBR.

Installation of 1 **PV-based plus energy storage charger** at the electric BRT Sunway depot. The demonstration project has attracted the attention of Rapid Bus management for replication under GEF-7 funding.

Development of **Training Needs, Safety Standards and Compliance Regulations for EV value chain**

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Growing demand from Member States

- Albania
- Bahamas
- Brazil
- Cape Verde
- Egypt
- Jordan
- Senegal
- Tunisia

Thank you..

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